Amendment to the Specification

In the Specification:

Please amend the specification as follows:

On Page 7, before the paragraph and heading titled Brief Description of the Drawing Figures beginning at line 29, please add the following new paragraphs (this addition represents disclosure being imported from the parent application in which priority is claimed, as noted above, and does not represent new matter).

> Another aspect of the present invention is a microreactor for use in the modular reaction system, for reacting one chemical with at least one other chemical, for the purpose of forming a chemical product. The reactor includes a plurality of simple plates, each simple plate having at least one opening formed therein, the simple plates being stacked together to form a plurality of layers and arranged so that at least one opening in each simple plate overlaps at least one other opening in an adjacent simple plate, thereby forming at least one pathway between at least some of the layers.
>
> Preferably, openings within different layers align so as to form at least one inlet port and at least one outlet port, for the receipt and discharge of chemicals, and to form at least one pathway for conveying chemicals to be processed. At least one pathway is formed that is in fluid connection with the inlet and outlet ports, and each simple plate has at least one opening formed in it.
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> A material from which the simple plates are fabricated is selected for compatibility with the chemical process. In one embodiment, the simple plates are formed from a material selected from the group consisting of crystalline wafers, ceramics, glasses, polymers, composite materials, and metals. Preferably, if formed from a metal, stainless steel is used. The material of the crystalline wafer is selected from the group consisting of silicon and germanium.
>
> It is also preferable that the reactor accommodate a plurality of operations, including temperature control, control of chemical residence time, chemical mixing, and chemical reacting. Temperature control is achieved using a combination of one or more temperature sensors and one or more heat exchangers. Preferably, chemical mixing is carried out by employing pathways sized so that a reactant achieves a stacked laminar flow with respect to at least one other reactant.
>
> In a reactor adapted for processing at least two reactants to form a desired chemical product, an inlet opening for each of the reactants and an outlet opening for the chemical product is provided in at least one of two outer

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simple plates. An intermediate simple plate is included for mixing the reactants and has at least one opening in fluid communication with each inlet opening and the outlet opening.

Generally, at least one heat transfer fluid inlet port is included in at least one of the outer simple plates, so that at least one heat transfer fluid can be introduced into the chemical reactor. Each heat exchanger is defined by an opening in a different intermediate simple plate. The opening is in fluid communication with the heat transfer fluid inlet and outlet ports and is disposed between adjacent simple plates.

Preferably, each heat exchanger is used to modify the temperature of at least one of the reactants and/or the chemical product. The heat exchangers can be used to modify a temperature of one of two reactants such that they are at different temperatures.

The thickness of the outer simple plates is about 3 millimeters, and that of the plurality of intermediate simple plates is at least about 0.2 millimeters, but not more than about 0.6 millimeters.

Preferably, the thickness of the intermediate simple plates that are adjacent to a heat exchanger is about 0.3 millimeters. When a series of openings in the simple plates of the chemical reactor defines a fluid path for a heat transfer fluid that flows through more than one heat exchanger, the flow rate and fluid pressure of the heat transfer fluid within each such heat exchanger are substantially equivalent.

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